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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,680	03/26/2004	Hirotaka Kaji	90606.4	7859
54071	7590	10/04/2007	EXAMINER	
YAMAHA HATSUDOKI KABUSHIKI KAISHA			OLSEN, LIN B	
C/O KEATING & BENNETT, LLP			ART UNIT	PAPER NUMBER
8180 GREENSBORO DRIVE			3609	
SUITE 850			NOTIFICATION DATE	
MCLEAN, VA 22102			DELIVERY MODE	
			10/04/2007	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/809,680	KAJI, HIROTAKA
Examiner	Art Unit	
Lin B. Olsen	3609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 26 March 2004.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-47 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1,17,30,31,46 and 47 is/are rejected.  
7)  Claim(s) 2-16,18-29 and 32-46 is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 26 March 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All    b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/18/2004.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_.

## DETAILED ACTION

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claims 30 and 47** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims recite an “attitude angle control apparatus control program” which is directed to a judicial exception to 35 U.S.C. 101 (i.e., an abstract idea) and is not directed to a practical application of such judicial application because the claim does not require any physical transformation. The Examiner suggests that the phrase “a computer readable medium for storing” be inserted in the claim to correct the deficiency.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29

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USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1, 17, 31 and 46** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **17, 6, 14 and 6** respectively of U.S. Patent No. 7,243,009. Although the conflicting claims are not identical, they are not patentably distinct from each other as described below.

Regarding independent **claim 1**,

- An attitude angle control apparatus which controls an attitude angle of a part of a marine vessel, comprising: - reads on claim 17, which is to a marine vessel navigation control apparatus.
- a measuring device for measuring the attitude angle of the part of the marine vessel and specific fuel consumption of the marine vessel or alternative values relating to the specific fuel consumption of the marine vessel; - reads on the operation information acquisition means for acquiring the operational information in the current environment as recited in claim 9 that is depended on by claim 17.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use specific fuel consumption or alternate values related to specific

fuel consumption as the operational information because fuel consumption determines range and cost of travel.

- a statistical model generator for generating a statistical model based on data from the measuring device; and – reads on a statistical model creation means as recited in claim 9 that is depended on by claim 17.
- an attitude angle controller for selecting an optimum attitude angle of the part of the marine vessel based on the statistical model generated by the statistical model generator. – reads on controls the navigation of the marine vessel using the optimized parameters as recited in claim 17.

Regarding independent **claim 17**,

- A method of controlling an attitude angle of a part of a marine vessel, comprising the steps of: - reads on claim 6 which depends on claim 1 where the method controls an attitude control in a marine vessel.
- measuring the attitude angle of the part of the marine vessel and specific fuel consumption of the marine vessel or alternative values relating to the specific fuel consumption of the marine vessel; - reads on the second step of acquiring the operation information in a current environment as recited in claim 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to use specific fuel consumption or alternate values related to specific fuel consumption as the operational information because fuel consumption determines range and cost of travel. It would have been obvious to one of

ordinary skill in the art at the time of the invention to measure attitude angle of a part of the marine vessel as operational information since is known that attitude angle (trim) effects the riding characteristics of a marine vessel.

- generating a statistical model based on data obtained from the measuring step; and – reads on the fourth step of creating a statistical model on claim 1.
- selecting an optimum attitude angle of the part of the marine vessel based on the statistical model generated in the statistical model generating step. – reads on the parameters being optimized as recited in claim 1.

Regarding independent **claim 31**,

- An attitude angle control apparatus which controls an attitude angle of a part of a marine vessel, comprising: - reads on claim 14, which depends on claim 9.
- specific fuel consumption acquisition means for acquiring specific fuel consumption of the marine vessel or alternative values relating to the specific fuel consumption; - reads on the information acquisition means of claim 9, where specific fuel consumption is operational information. It would have been obvious to one of ordinary skill in the art at the time of the invention to use specific fuel consumption as the operational information because fuel consumption determines range and cost of travel.
- evaluated-value calculation means for calculating evaluated values of the attitude angle of the part of the marine vessel based on the specific fuel consumption or the alternative values relating to the specific fuel consumption acquired by the

specific fuel consumption acquisition means; - reads on the evacuated-value calculation means of claim 9,

- information acquisition means for acquiring information relating to the evaluated values calculated by the evaluated-value calculation means, the information acquired by the information acquisition means including at least the attitude angle of the part of the marine vessel; - also reads on the information acquisition means of claim 9, where the attitude angle is operational information.
- information storage means for storing the evaluated values calculated by the evaluated-value calculation means and the information acquired by the information acquisition means; - storing the information collected is required when the statistical model generating means is going to use that information in a future step.
- statistical model generating means for generating a statistical model using the specific fuel consumption as an explained variable and the attitude angle of the predetermined part as an explanatory variable based on the evaluated values calculated by the evaluated-value calculation means and information stored in the information storage means; - reads on the statistical model storage means of claim 9.
- target attitude angle calculation means for calculating a target value of the attitude angle of the part of the marine vessel based on the specific fuel consumption or the alternative values relating to the specific fuel consumption and based on the statistical model generated by the statistical model generating

means; and – reads on the estimated value calculation means of claim 9 where the attitude angle is the value being calculated.

- attitude angle control means for controlling the attitude angle of the part of the marine vessel so as to match the target value calculated by the target attitude angle calculation means. – reads on the parameter updating means of claim 9 for updating the parameters controlled.

Regarding independent **claim 46**,

- A method for controlling an attitude angle of a part of a marine vessel, comprising the steps of: - reads on claim 6 which depends on claim 1 where the method controls an attitude control in a marine vessel.
- acquiring specific fuel consumption of the marine vessel or alternative values relating to the specific fuel consumption; - reads on the second step of acquiring the operation information in a current environment as recited in claim 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to use specific fuel consumption or alternate values related to specific fuel consumption as the operational information because fuel consumption determines range and cost of travel.
- calculating evaluated values of the attitude angle of the part of the marine vessel based on the specific fuel consumption or the alternative values relating to the acquired specific fuel consumption; - reads on the third step of calculating an evaluated value as recited in claim 1

- acquiring information relating to the evaluated values of the attitude angle of the part of the marine vessel, the information acquired including at least the attitude angle of the part of the marine vessel; reads on the second step of acquiring the operation information in a current environment as recited in claim 1.
- generating a statistical model using the specific fuel consumption as an explained variable and the attitude angle of the part of the marine vessel as an explanatory variable based on the evaluated values calculated and the information acquired; – reads on the fourth step of creating a statistical model on claim 1.
- calculating a target value of the attitude angle of the part of the marine vessel based on the specific fuel consumption or the alterative values relating to the specific fuel consumption and based on the generated statistical model; and – reads on the sixth step of calculating estimated values of the parameters.
- controlling the attitude angle of the part of the marine vessel so as to match the calculated target value. – reads on the seventh step of updating the parameters used for the control process.

***Allowable Subject Matter***

Claims 2-16, 18-29, and 32-46 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6549,830 for the control of a marine vessel to satisfy user preference, U.S. Patent No. 6,801,839 for a control parameter selecting apparatus, U.S. Patent No. 6,885,919 for changing speed to extend the range of a vessel and Pat. Pub. No. 2004/0006428 for a ship maneuvering system that changes thrust.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin B. Olsen whose telephone number is 571-272-9754. The examiner can normally be reached on M-F, 7:30am-5:00pm EST, Alternate Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian T. Pendleton can be reached on 571-272-7527. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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BRIAN TYRONE PENDLETON  
SUPERVISORY PATENT EXAMINER